Abstract No. kim617

Characterization of Atomic Density Profile in CdS/Zn_2SnO_4 Junctions by Angular Dependence of X-ray Fluorescence Method

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Beamline(s): X3B1

Density profile of selected atomic species in CdS/Zn_2SnO_4 heterojunctions has been investigated by using the Angular Dependence of X-ray Fluorescence (ADXRF) techniques. This type of heterojunctions is an important component in the new CdS/CdTe solar cells with world-record sunlight conversion efficiency. Samples of CdS, Zn_2SnO_4 (ZTO), and CdS/ZTO junctions were grown on glass, followed by annealing in either argon or $CdCl_2$ at different temperatures. It has been found that different heat treatment conditions can result in drastic variations in the density distribution of the constituents in the system as well as the crystal structure of CdS as indicated by our x-ray diffraction results.

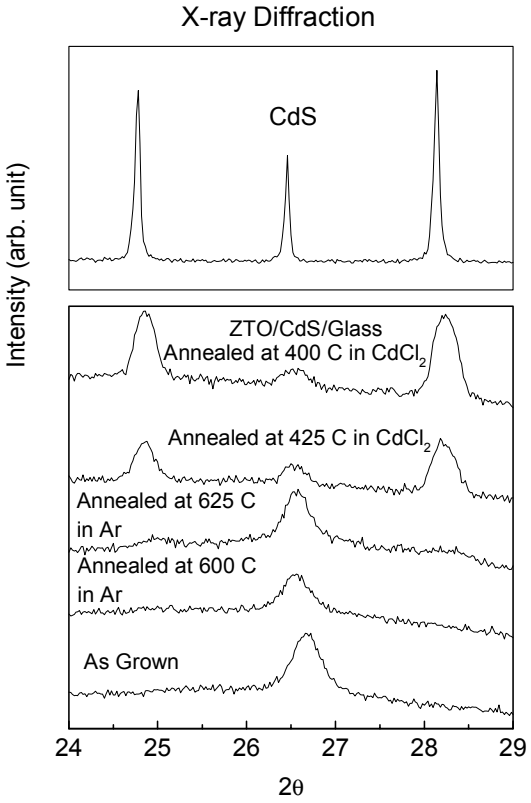

Figure1. XRD data for glass/CdS/ZTO samples

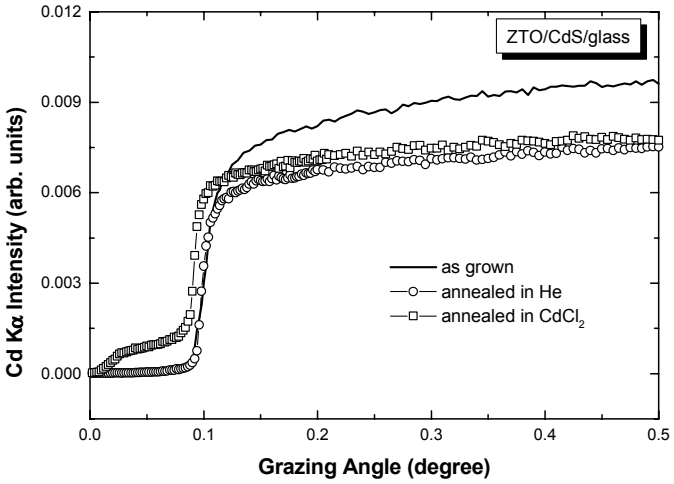

Figure2. ADXRF data for glass/CdS/ZTO samples

*The present research at SUNY-Buffalo is supported by NREL and DOE.